THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN K. BROWN III, CUONG M. HOANG, CHRISTOPHER L. KNAPP
and JOHN N. WELLMAN

Appeal No. 96-3950
Application No. 08/131,056[1]

ON BRIEF

Before KRASS, FLEMING, and RUGGIERO, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1 through 6, all of the claims pending in the present application.

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[1] Application for patent filed October 1, 1993.

The claimed invention relates to a printing system having a host computer in communication with a printer controller which is coupled to a print engine for producing a printed page. More particularly, Appellants disclose, at page 7 of the specification, a normal mode of operation in which page data sent from the host is rasterized by the printer controller and sent to the print engine for printing. On receipt of an initialization command from the host, the printing system enters an image mode as disclosed at pages 8 and 9 of the specification. Appellants further disclose that, in this image mode of operation, the host computer performs substantially the same rasterization process that is performed by the printer controller in the normal mode of operation as illustrated in the flow chart of Figure 3. This rasterization process produces page data in the form required for direct serialization to the print engine (specification, page 7).

Representative claim 1 is reproduced as follows:

1. A printing system comprising (a) a host computer including (i) means for rasterizing a page to be printed to produce page data in a form that it can be directly serialized by a printer coupled to the host computer, (ii) means for sending image initialization commands to a printer coupled to the host computer, and (iii) means for sending page data in said form to a printer coupled to the host computer after the image

initialization commands, and (b) a printer coupled to the host computer having a print engine and a printer controller with buffer memory, including(i) means for receiving and recognizing image initialization commands from the host computer, (ii) means for receiving page data, in a form that it can be directly serialized, from the host computer after the image initialization commands, (iii) means for storing said page data in buffer memory in the form it is received, and (iv) means for serializing the page data directly from the buffer memory to the print engine.

The Examiner's Answer relies on the following references[2]:

Komura et al. (Komura)	3,895,184	Jul. 15, 1975
Dennis	5,337,258	Aug. 09, 1994
		(Filed Jul. 10, 1992)

Claims 1-6 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by the disclosure of Dennis.

Claims 1-6 further stand finally rejected under 35 U.S.C. § 103 as being unpatentable over Kaku et al. in view of Komura and Dennis. In the statement of the grounds of rejection and in the arguments in the Answer, the Examiner no longer relies on Kaku et al. but rather only Komura and Dennis to support the rejection under 35 U.S.C. § 103.

[2] In the final rejection, the Examiner additionally relied on the U.S. patent to Kaku et al. (4,992,956); however, Kaku et al. has not been relied on in the Examiner's Answer.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Briefs[3] and Answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the Examiner, the arguments in support of the rejections and the evidence of anticipation and obviousness relied upon by the Examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellants' arguments set forth in the Briefs along with the Examiner's rationale in support of the rejections and arguments in rebuttal set forth in the Examiner's Answer.

We consider first the rejection of claims 1-6 under 35 U.S.C. § 102(e) as anticipated by Dennis. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure

[3] The Appeal Brief was filed August 25, 1995. In response to the Examiner's Answer dated December 6, 1995, a Reply Brief was filed February 6, 1996 which was acknowledged and entered by the Examiner without further comment on March 8, 1996.

which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W. L. Gore and Assoc, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

With respect to independent claim 1, the Examiner has indicated how he reads the various limitations on the disclosure of Dennis (Answer, pages 3 and 4). The Examiner makes particular reference to the block diagram of the printer system of Dennis illustrated in Figure 2 and the operation of the system of Dennis in the “option 1" mode illustrated in Figure 4. Appellants argue several alleged distinctions over Dennis including their contention that the system of Dennis does not provide data in a form that can be directly serialized by a printer (Brief, pages 9 and 10). In response, the Examiner states on page 3 of the Answer in reference to Dennis

> When the system operates in option 1 mode, resource assembler 208 of host computer renders RPL to create compressed bit map (raster) image of a page of data to be printed (see lines 33-44 in column 26 of

> Dennis). Serializable form is defined in lines 7-9 on page 5 of the Appellants' specification.

In their Reply Brief (pages 6-8), Appellants argue that Dennis does not describe how the disclosed hardware achieves the "option 1" mode in which the host computer produces a bit-map and further that any such compressed bit-map file is not in a form which can be directly serialized by the printer.

We note, initially, that Appellants are correct to the extent that, in Dennis, details of the actual production of a compressed bit-map file are described in relation to an element identified as the resource executor 224 located in the printer (column 9, lines 37-57). We are in agreement with the Examiner, however, that Dennis provides a clear disclosure of the rasterization process in which a compressed bit-map is produced at the host computer. In our view, it is clear that in the "option 1" mode disclosed by Dennis, the resource assembler 208 in the host computer acts as the resource executor to produce the compressed bit-map file (Dennis, col. 26, lines 33-42). With respect to the feature of producing print data in serializable form, the Examiner argues that the production of the compressed bit map data file

in the "option 1" mode of Dennis meets the "serializable form" claim limitation as defined in Appellants' specification (Answer, pages 7 and 8). The Examiner references page 5 of Appellants' specification as providing the definition of "serializable form" ,in particular, lines 7-9 which state

> The serialization is deemed to include any "on the fly" decompression or image enhancement performed by printer controller hardware or software on the rasterized page data.

In response, Appellants contend (Reply Brief, pages 8, 16, and 17), that the referenced passage does not state that "serialization" is limited to "on-the-fly" decompression. Appellants refer to page 9, lines 3-5 of the specification as a further description of operations which would be part of the serialization process performed at the printer.

After careful review of Appellants' arguments and the Dennis reference, we are in agreement with the Examiner that the rasterization process performed in the "option 1" mode in Dennis produces data in directly serializable form as defined by Appellants. The description at lines 3-5 of page 9 of Appellants' specification adds only the process of assembling

and ordering data blocks to the previously discussed decompression feature as operations to be performed on the serialized data. In our view, since Dennis clearly discloses (columns 16 and 17) the blocking of data as part of the development of print data, the assembling and ordering of these blocks in addition to decompression would necessarily have to be performed at the printer in the "option 1" mode.

With respect to the limitations regarding the sending of image initialization commands to the printer and the subsequent sending of serializable print data from host to printer after initialization, the Examiner (Answer, page 3) has referenced column 14, line 60 through column 15, line 4 and column 27, lines 27-35 of Dennis. The first passage involves the sending of status commands from the host computer to the printer while the second involves the selection of options or modes of operation. The Examiner argues at page 9 of the Answer that the claimed limitation is met since Dennis provides for communication of commands from the host to the printer and "initialization" is disclosed as being mode selection in Appellants' specification.

Appellants respond (Reply Brief, pages 8 and 9) that the commands mentioned in the cited passage in Dennis are not analogous to the recited "image initialization commands". On careful review of Appellants' arguments and Dennis, we are in agreement with the Examiner on this particular point. Dennis clearly provides for selection of operating modes (options 1, 2, or 3) by the host computer. In our view, the selection of an operating mode in Dennis would necessarily involve a command notification of the printer that a mode shift is about to take place especially in view of the fact that Dennis explicitly provides for the communication of status commands from host to printer.

We are further in agreement with the Examiner that Dennis meets the recited means for receiving of the aforementioned initialization commands at the printer. As to this particular feature, the Examiner has pointed to the resource scheduler 216 illustrated in Figure 2 of Dennis. While Appellants are correct in their remarks at page 11 of the Reply Brief that the passage in Dennis cited by the Examiner does not contain a reference to the resource scheduler, it is clear from the illustration in Figure 2 that commands from the host computer

are sent to the printer through the resource scheduler 216. Dennis further describes the functions of the resource scheduler as including initialization and synchronizing operations at column 22, lines 12-16. We also agree with the Examiner that, from the description and illustration in Dennis of the operation of the "option 1" mode in col. 26 and Figure 2 and from the disclosed functions of the resource scheduler 216, page data in compressed bit map serializable form sent from the host is received at the printer after "option 1" mode initialization.

As to the limitations involving the storing of the serializable page data in buffer memory and the subsequent presentation of serialized data to the print engine, it is our view that the Examiner is correct in his observation that buffering would be inherent in the printer of Dennis. The prior art reference need not expressly disclose each claimed element in order to anticipate the claimed invention. See Tyler Refrigeration v. Kysor Indus. Corp., 777 F.2d 687, 689, 227 USPQ 845, 846-847 (Fed. Cir. 1985). Rather, if a claimed element (or elements) is inherent in a prior art reference, then that element (or elements) is disclosed for purposes of

finding anticipation. See Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631-33, 2 USPQ2d 1051, 1052-54 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987).

Appellants have responded (Reply Brief, page 15) with the argument that the storing of bit map data in the "option 1" mode of Dennis in any memory of printer 218 would destroy the purpose of Dennis which is to achieve the most efficient manner of printing. We are not persuaded. We note in general terms that printers inherently require the use of buffers to temporarily store print data until the print mechanism can reproduce the data on to a printed page. While we agree with Appellants that the purpose of the "option 1" mode in Dennis is to achieve efficiency in printing, which is accomplished by removing the rasterization process from the printer controller, this would not necessarily eliminate the need for buffering that any print mechanism requires. In our view, in the "option 1" mode in Dennis as illustrated in Figure 4, the serializable compressed bit map data received at the printer from the host would necessarily be passed through a buffer before being decompressed as part of the serialization process and presented to print engine 226.

We further note that Appellants argue that In re Donaldson Co. Inc., 16 F. 3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) requires that the "means for" language occurring in the claims, in accordance with 35 U.S.C. § 112, sixth paragraph, must be interpreted as covering the structure, material or acts set forth in the specification and equivalents thereof. However, while Appellants have pointed to corresponding structure within their specification for the means statements in the claims, from our earlier discussion we are not persuaded that the structure disclosed by Dennis would not be considered equivalent.

With respect to claims 2-6, Appellants have argued at page 5 of the Reply Brief that the Examiner has improperly addressed only claim 1 in the rejection. While Appellants are correct to the extent that the Examiner has treated claim 1 as an exemplary claim, it is our view that the Examiner's analysis in the Answer establishes a prima facie case of anticipation with regard to claims 2-4 and 6 as well. We agree with the Examiner that in the "option 1" mode of Dennis the host produces compressed data as recited in claim 2, the rasterization is performed solely in the host computer as

recited in claims 4 and 6, and the change into "option 1" is a mode change as recited in claim 5.

However, after careful review of Appellants' arguments and the Dennis reference, we reach the opposite conclusion with regard to claim 3. The Examiner has addressed the particulars of claim 3 only on page 6 of the Answer which states

> With regard to claim 3, "information concerning resolution and margins", as claimed, is not taught by Dennis. Most printing systems have commands that designate resolution and margins. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use resolution and margins information in the system of Dennis in order to obtain the advantage of accurate size and position control, respectively.

Appellants argue (Reply Brief, page 19) that claim 3 was improperly rejected as being anticipated by Dennis since the above statement by the Examiner admits that the claimed limitation relating to resolution and margins is not taught in Dennis. We are in agreement with Appellants since anticipation can not be established by an assertion of obviousness as to a particular claimed feature. "Inherency and obviousness are distinct concepts." W. L. Gore &

Associates, Inc. v. Garlock, Inc., 721 F. 2d 1540, 1555, 220 USPQ 303, 314 (Fed. Cir. 1983) citing In re Sporman, 363 F. 2d 444, 448, 150 USPQ 449, 452 (CCPA 1966).

We now consider the rejection of claims 1-6 under 35 U.S.C. § 103 as unpatentable over Komura and Dennis. At the outset, we note that we share Appellants' confusion as to the particular basis for this rejection. Despite the Examiner's attempt to read the limitations of claim 1 on Komura at page 6 of the Answer, it appears from the analysis on page 5 of the Answer that the Examiner is using the teachings of Komura to supplement those of the primary reference to Dennis. Accordingly, we limit our discussion to this issue. At page 5 of the Answer, the Examiner, in considering a possible alternative interpretation of Dennis in which buffering may be found not to be inherent, has offered Komura as supplying a teaching of buffer memory utilized in a printer. However, in view of our earlier discussion of Dennis including the inherent feature of buffering, it is our opinion that the Examiner has established a prima facie case of anticipation with respect to claims 1, 2, and 4-6 based on Dennis. A disclosure that anticipates under 35 U.S.C. § 102 also renders

the claim unpatentable under 35 U.S.C. § 103, for "anticipation is the epitome of obviousness." Jones v. Hardy, 727 F.2d 1524, 1529, 220 USPQ 1021, 1025 (Fed. Cir. 1984). See also In re Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982); In re Pearson, 494 F.2d 1399, 1402, 181 USPQ 641, 644 (CCPA 1974). Thus, we sustain the examiner's rejection of appealed claims 1, 2, and 4-6 under 35 U.S.C. § 103.

However, we can not sustain the 35 U.S.C. § 103 rejection of claim 3. The Examiner asserts (Answer, page 6) the obviousness of utilizing resolution and margin information in Dennis. In our view, however,ve , the Examiner has failed to set forth a prima facie case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention. "Para-Ordnance

Mfg. v. SGS Importers Int'l, Inc., 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), cert. denied, 117 S.Ct. 80 (1996) citing W. L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

We agree with Appellants' contention at page 30 of the Reply Brief that the Examiner has provided no showing of where the particular commands recited in claim 3 are found in the cited Dennis and Komura patents nor in any other prior art printing systems. In addition, we note that the resolution and margins commands are recited along with a page mode command as being included in the image initialization commands, a feature not addressed by the Examiner. We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in a prior art reference, common knowledge or capable of unquestionable demonstration. Our reviewing court requires this evidence in order to establish a prima facie case. In re Knapp-Monarch Co., 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961); In re Cofer, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966).

In summary, the Examiner's rejection of claims 1, 2, and 4-6 under 35 U.S.C. § 102(e) and 35 U.S.C. § 103 is affirmed. The Examiner's rejection of claim 3 under 35 U.S.C. § 102(e) and 35 U.S.C. § 103 is reversed. Therefore, the decision of the Examiner rejecting claims 1-6 is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

ERROL A. KRASS)
Administrative Patent Judge)
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MICHAEL R. FLEMING Administrative Patent Judge	BOARD OF PATENT APPEALS AND INTERFERENCES
JOSEPH F. RUGGIERO Administrative Patent Judge	

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Appeal No. 96-3950
Application No. 08/131,056

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Appeal No. 96-3950
Application No. 08/131,056

APJ RUGGIERO

APJ FLEMING

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DECISION: AFFIRMED-IN-PART
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
Index Sheet-2901 Rejection(s): _____

Prepared: November 10, 1999

Draft Final

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